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File: USPT

Nov 20, 2001

DOCUMENT-IDENTIFIER: US 6320480 B1

TITLE: Wideband low-loss variable delay line and phase shifter

Detailed Description Text (3):

Each of these phase shifters in accordance with the present invention incorporates a variable delay element, such as a nonlinear transmission line NLTL, which can be either microstrip line, stripline, or a coplanar waveguide. Such nonlinear transmission lines are relatively well known in the art, for example, as disclosed in: "GaAs Non-linear Transmission Lines For Picosecond Pulse Generation and Millimeter Wave Sampling", by Rodwell et al., IEEE Transactions on Microwave Theory and Techniques, vol. 39, No. 7, pages 1194-1204; as well as "Novel Low-Loss Delay Line For Broad Band Phased Antenna Applications", by Zhang et al., IEEE Microwave and Guided Wave Letters, vol. 6, No. 11 November 1996, pages 395-397.